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## CURRENT SUPPORT BRIEF

TRAFFIC EMERGENCY ON THE TRANS-SIBERIAN RAILROAD

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TRAFFIC EMERGENCY ON THE TRANS-SIBERIAN RAILROAD

In recent months a traffic emergency has plagued the Krasnoyarsk Railroad, a heavily-transited segment of the Trans-Siberian Railroad. The 1,222 kilometer line between Mariinsk and Zima is presently being converted to alternating current electric traction. Soviet authorities originally intended that electric locomotives would be direct replacements for the existing steam equipment. However, on one stretch of the line, between Chernorechenskaya and Klyukvennaya traffic reached the limit which could be handled by steam traction just prior to electrification, and traffic delays and disruptions required the authorities hastily to introduce diesel traction as a temporary measure. Because of a shortage of alternating current locomotives, it has been necessary to retain the diesel locomotives long after electrification. Similar action will be required this year on adjoining sections of the line. The traffic volume on this line--the sole rail route to the Far East--was indicated early this year by a Soviet press dispatch which reported that the Chernorechenskaya-Klyukvennaya stretch was being crossed by more than 100 trains per day since the introduction of electric and diesel traction. 1/ (See Chart page 4)

Difficulties of the type encountered by the Krasnoyarsk Railroad are normally only temporary. They illustrate, however, the problems that can arise from the Soviet policy of operating many railroad lines at nearly peak capacity with available equipment and facilities and of not installing any more capacity than is absolutely necessary. This policy, although economical from the standpoint of transportation investment, engenders weaknesses in the railroad system in that reserve capacity is not maintained on certain important lines to meet unexpected growth in traffic requirements.

Last December, with the onset of cold weather, traffic on the difficult Chernorechenskaya-Klyukvennaya stretch became too much for the steam locomotives and diesel locomotives and crews had to be rushed in quickly, without prior planning or preparation. 2/ This fulfilled ahead of time a prophecy by the head of the Irkutsk Oblast Communist Party in July 1958 that capacity with steam traction would be reached about mid-1960. 3/ There were no servicing and repair facilities for diesel locomotive crews who were sent to help out in the emergency. 4/ In January it was stated that diesel locomotive crews and repairmen were working for twenty hours or more without a break and did not even have time for rest between trains. Living accommodations consisted of poorly equipped rail cars. 5/

In contrast to previously electrified stretches of the Trans-Siberian, which use direct current in the catenary wire, the Chernorechenskaya-Klyukvennaya stretch was being electrified with alternating current, the first such use of alternating current in the USSR for a heavily traveled trunk rail line. Electrification of the 275 kilometer stretch was reported completed on 31 December 1959, 6/ but since only a few AC locomotives were available and because of problems with their operation, diesel locomotives continued to be used there. It was not until March 1960 that the electric locomotives exceeded the diesel locomotives in number on this new AC stretch. 7/ Steam locomotives were eliminated entirely, 8/ not only because they were less efficient, but also because their vapor promoted the formation of ice on the overhead wire used by the electric locomotives. 9/ As more AC locomotives are received on the Chernorechenskaya-Klyukvennaya stretch the diesel locomotives are being shifted to the adjoining stretch to the east. 10/

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A large number of the breakdowns of AC locomotives on the Chernorechenskaya-Klyukvennaya stretch involving lengthy disruptions of traffic were caused by damage to the pantographs. There were about a hundred such cases in a three-month period, according to an article in the Soviet press. 11/ The pantographs got out of order because the contact network was set up hurriedly, and not properly adjusted. Delays were much longer than when similar accidents occurred on rail lines electrified with direct current. When a pantograph breaks down on a direct current locomotive, it is only necessary to tie the damaged part so that they do not touch the contact wire and then raise the second undamaged pantograph and move on. On the new AC stretch, however, the rule has been that the engineer has to wait until the catenary workers come and ground the wire, so that train traffic is sometimes held up for several hours because of trifling damage. Such long delays could be avoided, the article points out, by adopting the practice of French engineers who, after getting assured by telephone or radio that the current has been cut off, ground the catenary themselves and then tie up the broken pantographs. 12/

Another reason for difficulties on the new AC stretch was that personnel were poorly trained to operate the AC locomotives. During the first month the locomotives were in operation there were more than 300 cases of damage to the locomotives by the crews. There were even some cases in which the engineer did not know which button to push to start the locomotive. 13/

There have also been serious traffic tie-ups elsewhere on the Krasnoyarsk line where electrification is not yet complete. The steam locomotives which were taken off the Chernorechenskaya-Klyukvennaya stretch were put into operation on the adjoining stretch to the west, where dozens of them broke down, as a result of poor maintenance. 14/

Besides bringing in diesel traction, authorities have taken other steps to accelerate the flow of traffic on the Krasnoyarsk and adjoining rail systems. Pledges of cooperation by these railroads have been published in the railway newspaper, and a competition for more effective use of the new locomotives has been started. Publicity is being given to outstanding performance by various Krasnoyarsk Railroad workers; for example, individual locomotive engineers are lauded for conducting extra-heavy trains and making faster runs with fewer stops, and various dispatchers are praised for new methods of expediting traffic. Many such individuals have been presented with awards, both honorary and monetary. Half the March issues of the Soviet railway newspaper, Gudok, carry articles on this segment of Trans-Siberian Railroad.

Domestic production of AC locomotives and deliveries from France are behind schedule. Of the 50 French locomotives on order, 35 were supposed to have been delivered in 1959 and 15 in the first quarter of 1960, 15/ but as of 13 February only about 24 had been delivered. Twenty of the French locomotives were then in operation on the Krasnoyarsk Railroad and four more were en route there following tests on the experimental Ozherelya-Pavelets line in Moscow and Ryazan Oblasts, according to the Soviet press. 16/ The USSR is also reported to have placed an order for 20 AC locomotives with the West German firms Krupp and Siemens 17/, but apparently no deliveries have been made as yet. The schedule for production of AC locomotives in the USSR called for production of five in 1958, 60 in 1959, and 185 in 1960 at the Novocherkassk Plant, 18/ until 1960 the only producer. Actually, only one was produced in 1958 19/ and the goal for 1959 (upped to 64) 20/ was not achieved. 21/ The exact degree of underfulfillment is not known, but it is believed that it was substantial, since serial production was

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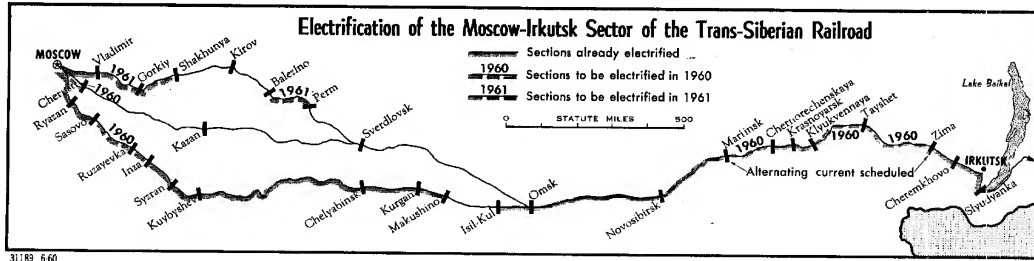
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late in getting under way. The experimental models had important defects in design, some of which are still present. 22/ At the Tifles Electric Locomotive Works construction of the first AC locomotive was reported under way in March 1960. 23/

The entire 1,222 kilometer from Mariinsk to Zima is now scheduled to be electrified with alternating current by November of this year 24/ but because of the mounting traffic and the shortage of motives it undoubtedly will be necessary to bring in additional numbers of diesel locomotives. However, there are indications that the authorities are not facing the unwelcome facts squarely, just as they did not admit that diesel traction would be required on Chernorechenskaya-Klyukvennaya until the emergency was actually upon them.



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